

#15
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Due Date: January 17, 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:)

Inventor: Robert E. Bou et al.)

Serial #: 09/585,508)

Filed: June 1, 2000)

Title: METHOD AND APPARATUS FOR
INFERRED SELECTION OF OBJECTS)

Examiner: Nguyen, Le V

Group Art Unit 2174

Appeal No.: _____

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REPLY BRIEF OF APPELLANTS

Board of Patent Appeals and Interferences
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 C.F.R. § 1.193, Appellants hereby submit their Reply Brief on Appeal from the final rejection of claims 1-18 of the above-identified application, as set forth in the Office Action mailed May 12, 2003 and Advisory Action mailed July 28, 2003. The Reply Brief is submitted in triplicate.

I. Grouping of Claims

Page 2, item (7) of the Examiner's Answer states that the rejection of the claims stand or fall together because appellant's brief does not include a statement that the grouping of claims does not stand or fall together.

Appellants respectfully traverse this assertion. Page 3, item VII of Appellant's brief clearly provides:

VII. GROUPING OF CLAIMS

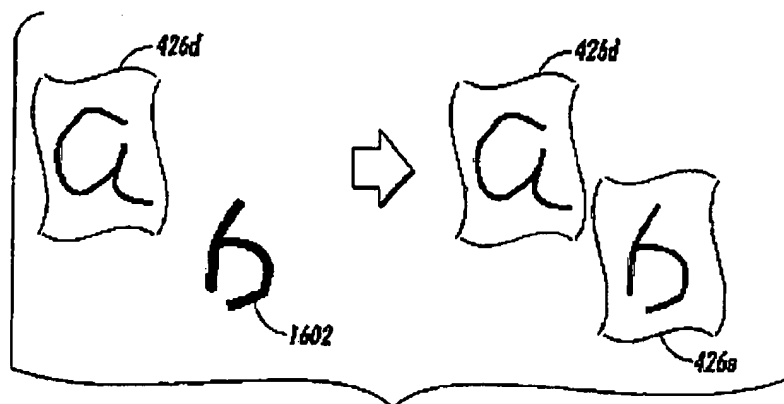
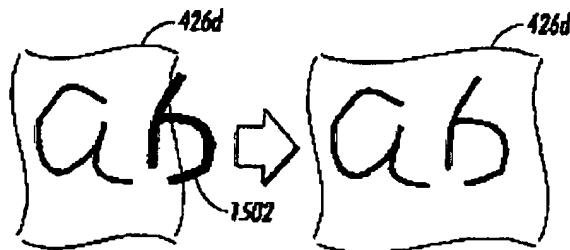
The rejected claims do not stand or fall together. Each claim is independently patentable. Separate arguments for the patentability of each claim are provided below.

Accordingly, Appellants reassert that the claims do not stand or fall together.

II. ArgumentsA. Neither Edwards nor MS Win teach, disclose, or suggest examining existing objects to obtain a relationship between existing objects

In the Appeal Brief, Appellants submitted that the cited portions of Edwards fail to teach examining existing objects to obtain a relationship. Specifically, Edwards examined a stroke that was just input by a user with existing painted strokes to determine a spatial relationship. Appellants submit that such a spatial relationship is clearly different and distinguishable from the claimed relationship that is based on existing objects maintained in three dimensional space.

The Examiner's Answer responds to the above by relying on Figures 15 and 16. Figs. 15 and 16 provide:

FIG. 15**FIG. 16**

Figures 15 and 16 are described in col. 10, lines 19-27:

Unlike strokes created on a physical notepad or whiteboard, the system 102 automatically groups strokes together in a segment. Each segment 426 is presented to a user by a boundary of surrounding its strokes. As shown in FIG. 15, if a stroke 1502 is drawn within a segment 426d, it is automatically joined with that existing segment 426d. However, as shown in FIG. 16, when a stroke 1602 is drawn in open space away from any other segment (c.g., segment 426d), a new segment 426e is created. A user can move a segment by making the meta-stroke 504 (shown in FIG. 5) starting at the segment's boarder.

As illustrated by the drawings and textual description, immediately upon drawing a stroke 1502, the system examines the new stroke 1502 and sees if it is drawn within a segment 426d. Depending on where the user drew new stroke 1502, the new stroke 1502 may or may not be added

to segment 426d. However, such a teaching still fails to describe examining two existing objects as claimed. Instead, Edwards teaches examining a new stroke with an existing segment.

In addition to the above, Edwards fails to teach the maintenance of such objects in three-dimensional space as claimed.

The answer also relies on MS Win Figs. 3-7 where users examine existing objects 300(x) and 400(y). However, there is no examination or comparison between objects 300(x) and 300(y). Instead, these figures merely display two different icons that have been selected by a user. Nowhere is there any description, implicit or explicit, that there is an examination of the two icons to determine if a relationship exists. Further, the icons displayed in the relied upon screen printouts are not maintained in three dimensional space as claimed. Instead, they are merely icons displayed on a window of an operating system.

B. Neither Edwards nor MS Win teach, disclose, or suggest a virtual object, a virtual object that is not specifically stroked, the creation of a virtual object based on the relationship between existing entities, and/or creating a selection set comprising existing objects AND a virtual object.

The Examiner's Answer responds to the arguments with respect to the above by relying upon the same previously relied upon portions of Edwards - figs. 15-16, col. 10, lines 19-27, and col. 12, lines 42-44. Further, the Answer provides that the relationship described between a and b in figs. 15 and 16 are used to create a virtual object. Further, the Answer provides that the virtual object is consistent with Appellants' definition as described in the specification and the standard definition well known to a person of ordinary skill in the art.

Appellants submit that the claims specifically provide for "creating one or more virtual objects that are not specifically stroked based on the relationships". Additionally, Appellants' specification on page 21, lines 13-16 provides:

As described above, virtual objects may consist of connectors between line segments, the area of a shape (e.g., a polygon), or other object that may be needed or utilized in answering queries or selecting objects.

Based on this description and the claim language, it is clear that a virtual object is not stroked whatsoever and is based on the relationship between existing objects.

All of the items relied upon in Figs. 15-17 are specifically stroked. Segment 426d is a segment (see col. 10, lines 19-24). A segment is a grouping of specifically drawn strokes (see definition of segments col. 2, lines 7-18 and col. 10, lines 19-21). Item 1502 is a specifically drawn stroke (see col. 10, lines 22-24). Item 1702 is also a joining stroke specifically drawn by a user (see col. 10, lines 36-40). Again, the claims provide for creating a virtual object that is not specifically stroked based on the relationships between two existing objects. In view of the above, virtual object 426d is not a virtual object that has not been specifically stroked. Instead, it is merely a collection of specifically stroked items.

Appellants assume that the Examiner is equating the segment 426d with the virtual object. However, Appellants note that in Fig. 15, a NEW virtual object is not created. Instead, the existing segment 426d is merely modified by adding the stroke 1502 to the segment. Accordingly, contrary to the claim, one or more virtual objects are not created.

Further, Appellants note that the claims then provide for creating a selection set that includes at least one existing object and a virtual object based on the relationships. As claimed, the selection set is clearly distinguishable from the virtual object. In this regard, the claims provide that the selection set contains and comprises at least one virtual object. The selection set also contains and comprises one existing object. Thus, the claims provide for three clearly independent elements: the virtual object, the existing object, and the selection set.

In view of the three claimed elements, an attempted comparison to Figs. 15-17 may be made. It is unclear from the prior rejections, the Advisory Action, and Answer as to which aspects of Edwards the Examiner is equating to these three elements. Accordingly, Appellants make various assumptions to cover each of the possible analysis.

Examining Fig. 15: In a first assumption, Appellants assume that the segment 426d is equivalent to the virtual object. With such an assumption, strokes "a" and "b" 1502 are the existing specifically stroked objects. The modified segment 426d contains both of the existing strokes "a" and "b". However, there is no selection set that contains both a virtual object (i.e., segment 426d in this example) and an existing object (items "a" and "b" 1502 in this example). Instead, the virtual object (i.e., item 426d in this example) merely contains both existing strokes ("a" and "b"). Accordingly, under this assumption, there is no selection set.

In a second assumption, segment 426d is viewed as the selection set. If segment 426d is a selection set, then (in accordance with the claims) segment 426d must contain both a virtual object and an existing object. To the contrary, segment 426d merely contains two existing objects ("a" and "b" 1502) and does not contain any objects that are not specifically stroked (as claimed). Accordingly, Fig. 15 cannot teach the three independently claimed elements.

Fig. 16 is similar to Fig. 15. However, instead of joining stroke "b" 1602 with segment 426d, a new segment 426e is merely created. Examining the resulting segments 426d and 426e, it may be seen that both segments merely contain specifically stroked items "a" and "b". There is no virtual object that has not been specifically stroked contained within either segment. Thus, if segments 426d or 426e are viewed as selection sets (that must contain virtual objects), both segments 426d and 426e fail to meet the claimed limitation of containing/comprising a virtual object. Alternatively, assuming that segments 426d and 426e are virtual objects themselves, there is clearly no selection set that contains the segment and a separable existing stroked item. Further, as claimed the selection set must be based on the relationship between two existing objects. Such a selection set is clearly lacking in Fig. 16.

Examining Fig. 17: Two segments 426d and 426e are merely joined using a specifically stroked line 1702 to create segment 426f. First, Appellants assume that segment 426f is a virtual object. In such a situation, the virtual object merely contains stroked items "a", "b" and line 1702. Further, there is no selection set that contains both the virtual object 426f and an existing object. Instead, there is only the virtual object segment 426f that contains existing strokes. In a second assumption, segment 426f is the selection set. In such a scenario, selection set 426f must contain a virtual object AND an existing object. Instead, selection set 426f merely contains specifically stroked items "a", "b" and line 1702 and does not contain a virtual object that has not been specifically stroked. Accordingly, Fig. 17 also fails to teach the claimed invention.

The Answer also relies on col. 12, lines 42-51 to teach the selection set as claimed. Consistent with the Answer, Appellants do agree that, as claimed, existing objects may be virtual objects. However, Appellants also note that, as claimed, such virtual objects must not be specifically stroked. Col. 12, lines 42-53, provides:

A three dimensional drawing behavior automatically constructs a 3D model based on a two dimensional freeform input stroke (see FIG. 29). In addition, meta-strokes can be used to rotate the constructed 3D model or perform editing operations (see FIG. 30). The three dimensional drawing

behavior has an internal 3D polygonal model. The behavior renders the model by adding painted strokes representing visible silhouette edges to the segment's stroke set. When the user rotates the model, the behavior removes all previous strokes, and adds new strokes. Unlike other application behaviors, it directly responds to low level meta-stroke events to implement rotation.

As can be seen by the cited portion, Edwards' 3D model is merely created based on a specific 2D stroke input from a user. Such a creation is contrary to the claims that create a virtual object based on a relationship between two existing objects (without no reference to an input stroke from a user). Further, similar to the analysis of Figs. 15-17, in both Fig. 29 and Fig. 30, there is no selection set that contains/comprises a virtual object and an existing object.

The Answer also relies on MSWin figs. 3-7. Appellants note that regardless of Appellants numerous assertions in the past, the Examiner has not yet provided any textual description that explains how icons may be selected in MSWin. Instead, the MSWin reference merely presents various screen printouts produced by the Examiner followed by the Examiner's assertions about what the printouts represent. Appellants noted in the Appeal Brief, that contrary to the Examiner's assertions, the description provided by the Examiner (in his own words) is contrary to the experimental evidence of Appellants using Windows 2000. Accordingly, Appellants traverse the assertions regarding the various icon selection processes provided in the final Office Action.

Nonetheless, the Answer provides that left clicking a selection device, a non-stroked virtual object "xy" is created as depicted and highlighted in fig. 5. Examining Fig. 5 of MSWin, it may be seen that two icons that have been specifically selected are both highlighted. Appellants assume that the Examiner is equating both selected icons to the virtual object. In such a situation, it is clear that there is no selection set that contains an existing object and a virtual object that is not specifically stroked. On the other hand, if the two icons are viewed as the selection set, then it is clear that the selection set fails to contain both a virtual object and an existing object (since both icons are specifically stroked by clicking on each to select them).

In addition to the above, the icons of MSWin are not objects maintained in 3D space as claimed. Furthermore, MSWin is not in the relevant field of art as set forth in more detail below.

C. Neither Edwards nor MS Win teach, disclose, or suggest selecting all objects in a set if a selection request is for one object in the set.

The claims specifically provide that if any one object in the set is selected, all of the objects in the set are selected. Again, the selection set, as claimed, specifically includes a virtual object and an existing object.

The Answer relies on Edwards col. 10, lines 19-35 to teach this claimed element. The Answer then states that

after the set is grouped as described above, users may selected either "a" or "b" in the set/segment and all objects in the set is selected and is ready to be acted upon, e.g., through such actions as a meta-stroke 504 of fig. 5, a set/segment can be moved by the user through a "drag border" event

Firstly, Appellants note that nowhere in the text of Edwards is there any statement that provides that users may select either "a" or "b" in the set/segment and all objects in the set is selected is ready to be acted upon. Appellants submit that such a selection process is not even contemplated in Edwards.

Col. 10, lines 27-35 provide:

A user can move a segment by making the meta-stroke 504 (shown in FIG. 5) starting at the segment's boarder. An embedded behavior "drag border" in the segment responds to this event through the segment controller, and moves the segment according to the movement of the user input device. This results in the generation of a "surface moved" event for each of the application behaviors on other segments to update their internal structures.

In view of the above statement, it may be seen that a segment may be moved as a unit. Appellants are confused as to whether the Examiner is asserting that the segment is a virtual object itself or is a selection set. As explained above, neither scenario is possible within the description of Edwards.

Nonetheless, it appears that in this portion of the rejection, the Examiner is asserting that the segment is the selection set (especially since the Answer provides and uses the alternative "set/segment" in the rejection). In view of this, the claims provide that an object in the segment must be selected in order to select all of the objects in the set. However, there is no description of determining if a selection request is for a single object in the segment as claimed.

Appellants note that col. 5, line 59-col. 6, line 31 describes the meta-strokes of Fig. 5 in detail:

The freeform display editing system 102 has two modes of stylus input. The primary mode is for drawing freeform strokes on the display 104. The secondary mode is activated to create meta-

strokes. In one embodiment, meta-strokes are created by holding a button 107 on the input device 106 shown in FIG. 1. These meta-strokes form gestures that are used for managing the visual layout of the display 104. In addition, these meta-strokes are used to apply behaviors to segments. A set of gestures, which is illustrated in FIG. 5, include a tap gesture 502, a move gesture 504, an erase gesture 506, and shortcut gestures 508. The gestures are shown in FIG. 5 using arrows to specify a direction in which to draw a meta-stroke to invoke a particular gesture if the gesture is more than a point. The tap gesture 502 is formed by drawing a dot on the display 104 using the input device 106 with the button 107 depressed. Responsive to the drawing of a tap gesture, a pie menu 602, as illustrated for example in FIG. 6, appears on display 104. Each section of the pie menu 602 is associated with the following commands: delete 604, redo 606, take snapshot 608, apply behavior 610, time slider 612, undo 614, color 616, and undo behavior 618. The shortcut gestures 508 provide immediate access to each command in the pie menu 602. For example, the shortcut gesture 508 for invoking the apply behavior command 610 is the shortcut arrow 510 (shown in FIG. 5).

Behaviors 432 have the property of being associated with or de-associated with a segment 416 in real time (i.e., on the fly). In the embodiment shown in the Figures, an application behavior 432 is applied to a segment by performing a meta-stroke of the tap gesture 502 to bring up the pie menu 602 on the display. After invoking the apply behavior command 610 in the pie menu 602, a behavior menu is displayed on display 104. FIG. 7 illustrates an example of a behavior menu 702 for invoking particular behaviors. A behavior is invoked in the behavior menu by selecting one of a plurality of unique identifiers 428a, 428b, 428c, 428d, and 428e. Each of these unique identifiers correspond to a calculator behavior, a draw behavior, a to do behavior, a map behavior, and a find behavior, respectively, which are described in more detail below in Section H.

Viewing all of Edwards and the above cited portions, it is clear that the user does not merely select an object in the selection set which is followed by a selection of all of the objects in the selection set (as claimed). Instead, the user merely enters a meta-stroke and a menu may be displayed (e.g., the pie menu of Fig. 6) that allows operations to occur with respect to a segment. In fact, the language in col. 10, lines 27-35 merely provides that by starting a meta-stroke at the border of a segment, the border of the segment is merely dragged. In this regard, there is no selection of an object within the segment that thereby provides for selecting all of the objects in the segment. Accordingly, Edwards fails to teach numerous aspects of the claims.

The Answer then relies on MSWin and the capability to open two files represented by the icons simultaneously for the user's viewing. Again, as stated above, there is no virtual object and selection set within MSWin. Further, the claims provide for creating a selection set followed by a selection of one object in the selection set that results in a selection of all of the objects in the selection set. In MSWin, two icons may be selected by the user (with no virtual objects being selected). Thereafter, the user may click the right mouse button and select "open". However, Appellants note that the user may right click anywhere on the screen to cause the menu of Figure 5 to display. Thus, instead of determining if a selection is for an object in the selection set, MSWin merely teaches selecting various icons and then activating a menu for all items selected. There is no

independent selection of a single object that thereby provides for selecting all items in the selection set (as claimed).

D. MS Win is Nonanalogous Art to the Present Invention and/or may not be combined with Edwards

In addition to the above stated differences, Appellants reassert that MSWin is clearly nonanalogous art to the present invention. The present claims clearly state reflect that there is a 2D viewport of existing objects maintained within a 3D space represented in a computer-implemented graphics system. MSWin is not even remotely related to a 3D space or a 2D viewport maintained in such space. The claimed objects are maintained within 3D space. MSWin's icons are not maintained in 3D space and the window displayed is not a 2D viewport of a 3D space of a graphics system. In addition, claim 7 provides that a graphics program is executing on a computer wherein the graphics program displays a 2D viewport of 3D space. Such a graphics program is not even remotely contemplated in MSWin. Instead, MSWin (Microsoft Windows) is merely an operating system. Microsoft Windows is an operating system for desktop and laptop computers. MS Windows provides a graphical user interface and desktop environment, in which applications are displayed in re-sizable, movable windows on screen. Such a teaching is clearly differentiable and not even remotely analogous to the present invention.

In addition, Appellants submit that Edwards and MSWin are nonanalogous art. Edwards invention is directed towards computer-controlled graphical drawing and editing systems, and more particularly to a method and apparatus for applying behaviors to freeform data (see col. 1, lines 10-13). However, as stated above, MSWin is an operating system and the screen printouts provided merely illustrate a graphical user interface and desktop environment presented by the operating system. MS Win does not contemplate or even mention any 3D environment or drawing program whatsoever.

The Answer provides that both Edwards and MS Win teach various claimed elements and since both references refer to objects, there is a motivation to combine. Firstly, the MSWin reference does not describe objects. Instead, it references files that are represented as icons on a desktop. Secondly, the analysis suggested by the Examiner is not the appropriate manner for determining if references can be combined. MPEP §706.02(j) provides that "there must be some

suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.”

There is no such motivation in either reference or in the knowledge generally available to one of ordinary skill in the art. In this regard, an operating system programmer would not be motivated to look to a graphics drawing application or art in such a field. Similarly, a graphics drawing application programmer would not be motivated to look to an operating system or art describing an operating system. Further, selecting an icons/files on a desktop and opening the files with an application using a single command does not even remotely suggest or motivate the programmer to look to graphics drawing application program (and vice versa) that defines how objects in 3D space are selected and drawn.

E. The Remaining Arguments with Respect to the Dependent Claims Have Not Been Refuted

On pages 12-14, Appellants presented various arguments with respect to the dependent claims (namely dependent claims 3, 9, 15 [on pages 12-13], and claims 6, 12, and 18 [on pages 13-14]) based on the fact that the claims do not stand or fall together as clearly stated in the Appeal Brief.

The Answer fails to respond to any of these arguments. In view of the failure to address the previously submitted arguments, Appellants submit that these claims are also in allowable form.

III. Conclusion

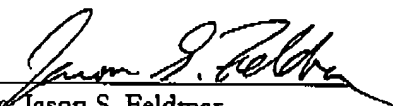
In light of the above arguments, Appellants respectfully submit that the cited references do not anticipate nor render obvious the claimed invention. More specifically, Appellants' claims recite novel physical features which patentably distinguish over any and all references under 35 U.S.C. §§ 102 and 103. As a result, a decision by the Board of Patent Appeals and Interferences reversing the Examiner and directing allowance of the pending claims in the subject application is respectfully solicited.

Respectfully submitted,

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G&C 30566.73-US-01